UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/582,630 | 02/26/2007 | Fred Kappertz | KAPP3001/FJD | 1986 |

23364 7590 05/16/2008

BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

| EXAMINER | |
|---|---|
| DUNLAP, JONATHAN M | |
| **ART UNIT** | **PAPER NUMBER** |
| 2855 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 05/16/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/582,630 | KAPPERTZ ET AL. | |
| | Examiner | Art Unit | |
| | Jonathan Dunlap | 2855 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 20 recites the limitation "the at least one groove " in line 7. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 11-12 and 14-16, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Frey et al. (PG-PUB 2002/0033054 A1).

Considering claim 11, Frey discloses a magneto-inductive flow sensor for a fluid flowing in a pipeline, comprising:

- a measuring tube **1** for conveying the fluid (**Figures 1-2; [0127]**);
- a magnetic circuit **2** arrangement arranged at said measuring tube **1** for producing and guiding a magnetic field, which induces an electric field in the flowing fluid (**Figures 1-2; [0127]**); and

- measuring electrodes **3,31,32** for tapping a voltage from the electric field (**Figures 1-2; [0182]**);

- wherein said measuring tube **1** includes a carrier tube **11** and a liner **12**, especially a tubular liner, of insulating material accommodated in a lumen of said carrier tube (**Figures 1-2; [0129]**); and

- at least one groove **111,112** formed in a wall of said carrier tube **11**, which is open toward the lumen of said carrier tube (**Figures 3a, 3b; [0153-156]**).

Considering claim 12, Frey discloses that said measuring tube includes:

- an open-pored support skeleton **13** embedded in said liner **12** for stabilizing said liner (**[0129]**); and

- said at least one groove **111,112**, is at least partially so filled by a material, especially a sintered material, of said support skeleton, directly sintered in said carrier tube (**[0129]; [0153-156]**); and

- said support skeleton **13** is connected by shape interlocking with said carrier tube **11** (**[0153-156]**).

Considering claim 14, Frey discloses that a ridge is formed on said support skeleton **13** corresponding to said one groove **111,112**, and said ridge is comprised, at least in part, of the material of said support skeleton **13** and extends into said one groove **111,112** (**Figures 3a, 3b; [0153-156]**).

Considering claim 15, Frey discloses that said carrier tube **11** further has an additional groove **other of 111,112**, spaced from said one groove **first of 111,112**,

formed in a wall of said carrier tube and open towards the lumen of said carrier tube (**Figures 3a,3b**).

Considering claim 16, Frey discloses that said at least one groove **111,112**, is at least partially so filled by insulating material **12** of said liner, that said liner is connected with said carrier tube by shape-interlocking (**Figure 3e; [0157]**).

Considering claim 18, Frey discloses that said first groove **111,112** is embodied as an annular groove extending essentially coaxially with the wall of said carrier tube (**Figures 3a,3b; [0153-156]; Cylindrical area is coaxial and annular**).

Considering claim 20, Frey discloses a method for manufacturing a measuring tube for a flow sensor comprising a measuring tube which includes a carrier tube and a liner, a magnetic circuit arrangement, and measuring electrodes, which method comprises the steps of:

- producing a support skeleton **13** in the lumen of the carrier tube **11**; and
- introducing the liner **12** into the lumen of the carrier tube;
- wherein for producing the support skeleton **13**, loose sinter starting material is so charged into the lumen of the carrier tube, that it at least partially fills the at least one groove **111,112**, and the charged sinter starting material is sintered within the carrier tube; and
- for introducing the liner **12** into the lumen, insulating material is allowed to penetrate at least partially into the produced support skeleton and is allowed to solidify in the lumen of the carrier tube, after the sinter starting material has been sintered within the carrier tube (**[0129-0157]**).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 13, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frey et al. (PG-PUB 2002/0033054 A1) in view of Schmoock (US Patent 4,388,834).

Considering claim 13, Frey fails to disclose that said at least one groove has a backcut, which is so filled by material of said support skeleton that a radially effective shape interlocking is formed between said support skeleton and said carrier tube.

8. However, Schmoock teaches the use of a backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of a sintered material. The invention fails to disclose that the groove has a backcut. The invention by Schmoock teaches the use of a backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to been obvious to one of ordinary skill in the art at the time the invention was made to use the backcut groove

as taught by Schmoock in the invention by Frey. That is, using the known technique of a backcut groove to provide increased connection would have been obvious to one of ordinary skill.

Considering claim 17, Frey fails to disclose that said at least one groove includes a backcut, which is so filled by insulating material of said liner, that a shape-interlocking effective at least radially inwardly is formed between said liner and said carrier tube.

9. However, Schmoock teaches the use of a backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of a insulating material. The invention fails to disclose that the groove has a backcut. The invention by Schmoock teaches the use of a backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to been obvious to one of ordinary skill in the art at the time the invention was made to use the backcut groove as taught by Schmoock in the invention by Frey. That is, using the known technique of a backcut groove to provide increased connection would have been obvious to one of ordinary skill.

Considering claim 19, Frey fails to disclose that said first groove has an essentially trapezoidally shaped cross section.

10. However, Schmoock teaches the use of a substantially trapezoidally shaped backcut in the wall of a tube that is filled with a connecting material (**Figures 10-12; Column 4, lines 45-53**).

The invention by Frey is directed towards a magneto-inductive flow sensor having a groove in the wall of the inner tube for incorporation of a insulating material. The invention fails to disclose that the groove has a substantially trapezoidally backcut. The invention by Schmoock teaches the use of a substantially trapezoidally backcut in order to more reliably connect two elements of an electromagneto-inductive flow sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to been obvious to one of ordinary skill in the art at the time the invention was made to use the substantially trapezoidally backcut groove as taught by Schmoock in the invention by Frey. That is, using the known technique of a substantially trapezoidally backcut groove to provide increased connection would have been obvious to one of ordinary skill.

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571)270-1335. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward Lefkowitz/

Supervisory Patent Examiner, Art Unit 2855

/J. D./
Examiner, Art Unit 2855
May 14, 2008